

## FIELD TRIPS OF THE CLUB

Two interesting late fall excursions of the club, added to the 1930 schedule, were on Sunday, November 30, in the region of old iron mines between Sterling and Tuxedo Lakes, a joint meeting with the Trail Campers of America; and on Sunday, December 7, on Bellvale Mountain, north of Greenwood Lake, a joint outing with the Warwick, New York, group which maintains the Appalachian Trail in this region.

Mosses were the most important subject for study on the November 30 meeting. A number of species were found in good "fruiting" condition, perhaps the most uncommon, at least the most infrequently noted, being the quaint *Buxbaumia aphylla*. *Webera sessilis*, the other almost stemless species, was common. *Leucobryum glaucum* was very common but was not found in fruit, although the writer found it with plentiful capsules on a later Sunday, on Kittatiny Mountain in western New Jersey a rather rare and beautiful sight. Species with mature or opened but persistent capsules were *Polytrichum Ohioenes*, *Bryum caespiticum*, *Ditrichum tortile*, *Ceratodon purpureus*, *Dicranella heteromalla*, very common, *Dicranum scoparium* (very few capsules observed), *Catharinea undulata*, very common, and handsome with masses of warm brown capsules, *Aulacomnium heterostichum*, *Hylocomnium proliferum*, *Hypnum recurvans*, and *Thelia hirtella*. *Sphagnums*, *Mniums* and *Dicranums* were noted, without capsules, also *Thuidium delicatulum*, and *Climacium Americanum*. *Conocephallum* was the most conspicuous liverwort. This region with its swamps and ledges would be interesting for another excursion for the mosses which mature their capsules in spring and early summer. The iron mines, some dating from before the Revolution, were of interest, particularly the great iron roaster, at the Red Back Mine, used up to sixty years ago to drive the sulphur out of the ore to make it marketable. On the way out to Sloatsburg, in a heavy rain, which began about the middle of the afternoon, the party noticed a new beaver pond, on a brook rising near the south end of Tuxedo Park, another new location of these animals, probably from the original transplantations of them ten years ago, in the Harriman Park.

On the December 7 excursion from Mount Peter, along the Appalachian Trail over Bellvale Mountain to Mombasha High

Point, many of the same mosses were noted, *Thelia hirtella* and *Hypnum recurvans* being especially handsome and in copious fruit, on the bases of white oaks. An unexpected and novel feature led the group into the field of paleobotany. Mr. F. J. Wells, of Greenwood Lake, photographer and student of natural history, showed us specimens of fossil plant impressions, from the Pequanac shales along the motor road from Greenwood Lake over Mount Peter to Warwick, where the rock has been blasted down in widening the highway and fragments are easy to find. They were identified for me by Dr. Arthur Hollick, of the New York Botanical Garden, as *Lepidodendron gaspéanum*, a plant very similar to our modern Lycopodiums, or clubmosses, but much larger, of the Devonian Period. This species, judging from the width of the impressions in the rock, one to two inches in width, was not as large as the great Lepidodendrons, Sigilarias and Calamites of the Pennsylvanian and Mississippian Periods (formerly joined as Carboniferous), which grew to be sixty feet high, but it was obviously a giant compared to our present day, low-growing clubmosses.

Fitzgerald's Falls, on the Appalachian Trail, east of the Greenwood Lake-Monroe Road, is an interesting place, botanically, for mosses and liverworts; and geologically, for the variety of formations nearby. The stream, a branch of Trout Brook, flows down a gully in the pre-Cambrian gneisses and granites, over a wide dike of black basalt, similar to those found in many parts of the Hudson highlands penetrating the pre-Cambrian and younger than it; while a few rods to the west is a ledge of vertically tilted, shaly limestone, one of the basal strata of the Green Pond formation, which makes Bellvale Mountain to the west, and probably of Silurian age. A close study of the plants of this area would be interesting to see if there are ecological differences in species, due to the varying kinds of rock.

Cat Rock, an uptilted ledge of red and white conglomerate, just off the Appalachian Trail, on Bellvale Mountain, was interesting for the dense growth of the Rock Tripe, lichen, mostly *Gyrophora Dilleni*, on the cliffs and talus.

A winter excursion, jointly with the New York section of the Green Mountain Club, on Sunday, December 28, in the Blue Mountain Reservation of the Westchester County Park system, southeast of Peekskill, was interesting chiefly for the variety of

deciduous trees, a blanket of four inches of snow covering mosses and ferns. The dead stems of the Purple Loosestrife, *Lythrum Salicaria*, on brooks and small swamps, high up in the preserve, at elevations 400 feet above the Hudson, indicated that this adventive plant, which has spread from whatever coastal point it was established at seventy-five or one hundred years ago, all along the Atlantic seaboard from the Gulf of St. Lawrence to the Potomac, must be spread by other means than tidal or fresh waters, for it could scarcely have been seeded in these high swamps except by birds. It is now well established on many tributaries of the Hudson, miles from their mouths and 200 to 500 feet above the river. One notices red-winged blackbirds feeding on its seeds in the brackish marshes along the Hudson where it is so common, and it seems probable that these or other birds carry it to the streams and swamps back of the river.

The geology of this reservation is interesting, especially the inclusions of schist, limestone and gneiss, in the diorite which invaded and swamped the older rocks, and absorbed all but these small remnants which are to be seen in the glaciated surfaces of the black, weathered diorite. Some of the diorite ledges and some boulders of the same rock which were transported short distances by the ice, and now lie perched in conspicuous places, have a jointed appearance, something like the basalts of the Watchungs in New Jersey, with cracks frequently separating at 120 degree angles so as to make approximately incipient hexagonal columns.

The chairman of the field committee is now making up the field schedule for 1931, and welcomes the aid and suggestions of all members of the club. A number of winter and spring excursions will be held, to be announced in the weekly bulletin of the New York Academy of Sciences. Volunteers are invited for any Saturday, Sunday, holiday or week-end, from now to next December. The printed schedule will appear about May 1. It is desired to make the schedule richer and more varied than ever before, and offers of leadership in any field of botany, especially in mosses, lichens, grasses, sedges and liverworts, in addition to the more common and popularly known forms of vegetable life, will be welcomed.

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*Chairman, Field Committee*